APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/710,387	07/07/2004	Yongyong Xu		4386

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EXAMINER
BAE, JI H

ART UNIT	PAPER NUMBER
2115	

DATE MAILED: 10/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _07 July 2004_.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-35_ is/are pending in the application.

    4a) Of the above claim(s) _20-35_ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-19_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _7-7-2004_.

4)☒ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _20060930_ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

I.   Claims 1-19, drawn to methods for allowing a mobile device to run multiple operating systems by packaging a guest OS inside a host OS image, classified in class 713, subclass 1.

II.   Claims 20-22, drawn to a method to preserve state and data of a host OS by protecting memory, classified in class 711, subclass 152.

III.   Claims 23-27, drawn to a method to preserve state and data of a host OS by "faking" a reduced memory area, classified in class 711, subclass 152.

IV.   Claims 28-31, drawn to a memory device driver to claim memory for a host OS, classified in class 711, subclass 147.

V.   Claim 32-35, drawn to a method to preserve state and data of a host OS by backing up to an external memory card, classified in class 711, subclass 162.

The inventions are distinct, each from the other because of the following reasons:

Inventions I-V are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because invention I may be practiced independently from inventions II-V, and each of inventions II-V may be practiced independently from the other.

The examiner has required restriction between combination and subcombination inventions. Where applicant elects a subcombination, and claims thereto are subsequently

found allowable, any claim(s) depending from or otherwise requiring all the limitations of the allowable subcombination will be examined for patentability in accordance with 37 CFR 1.104. See MPEP § 821.04(a). Applicant is advised that if any claim presented in a continuation or divisional application is anticipated by, or includes all the limitations of, a claim that is allowable in the present application, such claim may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application.

Because these inventions are independent or distinct for the reasons given above and there would be a serious burden on the examiner if restriction is not required because the inventions require a different field of search (see MPEP § 808.02), restriction for examination purposes as indicated is proper.

During a telephone conversation with Yongyong Xu on 27 September 2006, a provisional election was made without traverse to prosecute the invention of group I, claims 1-19. Affirmation of this election must be made by applicant in replying to this Office action. Claims 20-35 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Specification

The use of the trademarks Palm™, Windows™, iPAQ™, and others have been noted in this application. It should be capitalized wherever it appears and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

Claim Rejections - 35 USC § 112

An examination of this application reveals that applicant is unfamiliar with patent prosecution procedure. While an inventor may prosecute the application, lack of skill in this field usually acts as a liability in affording the maximum protection for the invention disclosed. Applicant is advised to secure the services of a registered patent attorney or agent to prosecute the application, since the value of a patent is largely dependent upon skilled preparation and prosecution. The Office cannot aid in selecting an attorney or agent.

A listing of registered patent attorneys and agents is available on the USPTO Internet web site http://www.uspto.gov in the Site Index under "Attorney and Agent Roster." Applicants may also obtain a list of registered patent attorneys and agents located in their area by writing to the Mail Stop OED, Director of the U. S. Patent and Trademark Office, PO Box 1450, Alexandria, VA 22313-1450

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-19 are rejected as failing to define the invention in the manner required by 35 U.S.C. 112, second paragraph.

The claim(s) are narrative in form and replete with indefinite and functional or operational language. The structure which goes to make up the device must be clearly and positively specified. The structure must be organized and correlated in such a manner as to present a complete operative device. The claim(s) must be in one sentence form only. Note the format of the claims in the patent(s) cited.

In order to avoid problems related to lack of antecedent basis, applicant is encouraged to use appropriate language to distinguish previously recited limitations from new ones. For

example, employing "said" or "the" to indicate that the limitations has been previously recited, with all original recitations written in the indefinite form. For example:

"**A system** to configured to place **a processor** in **a low-power operating mode**, wherein **said system** comprises **a power management controller** to place **said processor** in **the low-power operating mode**."

Additionally, applicant is reminded to use consistent language when referring back to previously recited limitations. For example, all instances of a "guest OS image" should be referred to as "said guest OS image" or "the guest OS image", instead of "said guest OS program" or "said guest OS".

The examiner notes that there are numerous problems in applicant's claims related to lack of antecedent basis, or lack of clarity in the scope of applicant's claims due to ambiguous language. The examiner points out the following as exemplary; the applicant is encouraged to review all claims for the following informalities.

Regarding claim 1, applicant has a recited a system, but subsequently appears to be claiming a method ("comprising the steps of", line 3). It is unclear to the examiner whether a system or method is being claimed.

Claim 1 recites the following limitations:

"the state and data" , line 2;

"the original operating system", line 3

"the image" in line 5;

"the host OS" in line 7;

"the current state and data of the host OS" in line 10;

"the guest OS" in line 11;

"the system state and data" in line 13;

"the original host OS" in line 13;

"the host OS" in line 13.

There is insufficient antecedent basis for these limitations in the claims. Applicant is referred to examiner's prior comments regarding appropriately differentiating language for newly recited claim limitations vs. those previously recited.

Additionally, claim 1 uses ambiguous language which does not properly limit the scope of the claims. For example, claim 1 recites a "special host OS application or file", and a "special boot loader." It would not have been obvious to one of ordinary skill in the art what constitutes "special", nor does applicant's specification provide a definition.

Regarding claim 2, the phrase "or other mobile devices" renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed by "or the like"), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d).

Claim 4 recites "some special formats". See rejection of claim 1.

Claim 6 recites the limitation "the guest OS image wrapper application". There is insufficient antecedent basis for this limitation in the claims.

Claim 10 recites "the same procedure" in line 3. It is unclear what procedure is being referred to.

Claim 13 recites that the boot loader "do not care about free or unused memory blocks". It is unclear what is meant by this limitation.

Claim 14 recites "of peripheries" in line 2. It is unclear what is meant by this limitation. Additionally, claim 14 recites that IO states or registers or peripheries are saves in memories and preserved "the same as other memories". It is unclear what is meant by this limitation.

Regarding claim 15, the phrase "or other mobile operating systems" renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed

by "or the like"), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d).

Regarding claim 16, it is unclear to the examiner what is being claimed. Applicant's preamble recites a method of packaging a guest OS image inside a host OS application, but the examiner fails to understand how the recited steps accomplish the recited goal. In particular, it is not at all clear how the recited steps of claim 16 provide a result of a guest OS image packages inside a host OS application. Additionally, applicant has recited "some special file formats" (see rejection of claim 1). In line 7, applicant uses exemplary language which does not properly limit the scope of the claims ("such as record headers").

In line 10 of claim 16, applicant recites "the wrapper host application". There is insufficient antecedent basis for this limitation in the claims.

Claim Rejections - 35 USC § 103

Claims 1-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huang et al., U.S. Patent Application Publication No. 2002/0157001 A1, in view of Ohno et al., U.S. Patent No. 6,715,016 B1.

Regarding claim 1, Huang teaches a mobile device to run multiple operating systems, employing a method that comprises the steps of:

preparing a guest OS image, and packaging the image into a host OS file [Fig. 6, second operating system];

starting a boot loader for the host OS to read, unpack, load, and start the guest OS image [paragraph 0018];

exiting the guest OS, running exiting code to restore the system state and data to the original host OS [paragraph 0018].

Huang does not teach the saving of a state and date of the host OS before switching to the guest OS.

Ohno teaches a computer system for running multiple operating systems that saves the state of the current OS before switching to a second OS [col. 2, lines 4-11].

It would have been obvious to one of ordinary skill in the art to combine the teachings of Huang an Ohno by modifying Huang to save the state of the host OS before switching to the guest OS, as taught by Ohno. Both Huang and Ohno are directed towards analogous subject matter – namely, running of multiple operating systems on a single computer, and enabling the switching between them. The teachings of Ohno would improve the system of Huang by providing a way to easily restore the operating state of the host OS when switching back from operating under the guest OS.

Regarding claim 2, Huang teaches that the device is a mobile device.

Regarding claim 3, Ohno teaches that the original host OS cannot share its memory with any other OS concurrently.

Regarding claim 5, Ohno teaches a step of preserving the state and data of the guest OS when the user wants to temporarily switch away from the guest OS. Claims 9 and 14 are rejected on similar grounds.

Regarding claim 6, Huang teaches that the boot loader is a standalone OS application.

Regarding claims 7 and 8, it would have been obvious to one of ordinary skill in the art to compress the guest OS image, as well as use up all memories available.

Regarding claim 10, Huang teaches starting additional guest OS from either host OS or within the guest OS.

Regarding claim 11, Huang teaches that the guest OS image is stored in a memory card [Fig. 6, expanding apparatus].

Regarding claim 12, Huang teaches that the guest OS images is started when the card is inserted into the device [paragraph 0018].

Regarding claim 15, Huang teaches a mobile operating system.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Lescouet et al., U.S. Patent Application Publication No. 2004/0205755 A1;

Watt et al., U.K. Patent Application Publication No. 2395313 A;

Endo et al., U.S. Patent No. 6,615,303 B1;

Blanset et al., U.S. Patent No. 4,747,040;

Arrow et al., U.S. Patent No.6,175,917 B1;

Bugnion et al., U.S. Patent No. 6,944,699 B1;

Solomon, U.S. Patent No. 6,269,409 B1;

Lee, U.S. Patent No. 6,327,653 B1;

Cohen, U.S. Patent No. 6,957,286 B1;
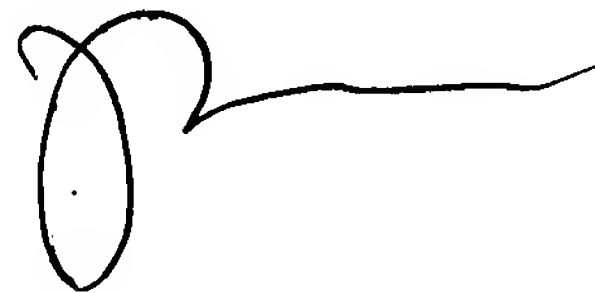
Sekiguchi et al., U.S. Patent No. 2001/0016879 A1.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ji H. Bae whose telephone number is 571-272-7181. The examiner can normally be reached on Monday-Friday, 10 am to 6:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Thomas Lee can be reached on 571-272-3667. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private

PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you

would like assistance from a USPTO Customer Service Representative or access to the

automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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